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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,298	04/02/2001	Jeffrey Douglas Haggar	RSW920010036US1	9384

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EXAMINER	
MATTIS, JASON E	
ART UNIT	**PAPER NUMBER**
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/824,298	HAGGAR ET AL.	
	Examiner	Art Unit	
	Jason E. Mattis	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12,46 and 47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12,46 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment filed 9/27/07. Claims 11 and 13-45 have been cancelled. Claims 1-10, 46, and 47 are currently pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 5-8, 12, and 46 rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman et al. (U.S. Pat. 6643292 B2), hereafter referred to as Chapman '292, in view of Chapman et al. (U.S. Publication US 2003/0103450 A1), hereafter referred to as Chapman '450.

With respect to claim 1, Chapman '292 discloses a method for managing traffic in a network data processing system **(See column 7 lines 39-58 and Figure 8 of Chapman '292 for reference to processor, which is a data processing system, running a TCP protocol to implement a method for managing traffic)**. Chapman '292 also discloses monitoring traffic for a plurality of TCP connection through a given

network path **(See column 7 line 59 to column 8 line 12 of Chapman '292 for reference to monitoring bandwidth usage of multiple TCP connections of a TCP trunk, which is a network path)**. Chapman '292 further discloses prior to sending a packet on a particular TCP connection determining if the packet will cause traffic for the network path to exceed the level of traffic allowed, and if so, performing a congestion control function for the traffic of the particular TCP connection using an action based on a TCP transmission protocol **(See column 8 lines 21-54 of Chapman '292 for reference determining that a particular packet will cause a TCP trunk to exceed its guaranteed minimum bandwidth before it is sent and for reference to, if the packet will cause the TCP trunk to exceed its guaranteed minimum bandwidth, marking the packet with a lower priority indicating it is discardable to perform congestion control for the traffic of the TCP connection)**. Although Chapman '292 does disclose determining if a packet will cause a TCP trunk or TCP connection to exceed its allocated minimum bandwidth before it is sent and performing an action to help control congestion if the minimum bandwidth is exceeded **(See column 8 lines 21-54 of Chapman '292)**, Chapman '292 does not specifically disclose that the action will result in reducing the traffic for the TCP connection.

With respect to claim 7, Chapman '292 discloses a method for managing traffic in a network data processing system **(See column 7 lines 39-58 and Figure 8 of Chapman '292 for reference to processor, which is a data processing system, running a TCP protocol to implement a method for managing traffic)**. Chapman '292 also discloses monitoring traffic for each of a plurality TCP connections through a

given network path **(See column 7 line 59 to column 8 line 12 of Chapman '292 for reference to monitoring bandwidth usage of multiple TCP connections of a TCP trunk, which is a network path)**. Chapman '292 further discloses prior to sending a packet on a selected TCP connection determining if the packet will cause traffic for the network path to exceed a threshold as well as its fair share for the selected TCP connection, and if so, performing a congestion control function for the traffic of the particular TCP connection using an action based on a TCP transmission protocol **(See column 8 lines 21-54 of Chapman '292 for reference determining that a particular packet will cause a TCP connection and/or a TCP trunk to exceed its guaranteed minimum bandwidth before it is sent and for reference to, if the packet will cause the TCP connection or TCP trunk to exceed its guaranteed minimum bandwidth, marking the packet with a lower priority indicating it is discardable to perform congestion control for the traffic of the TCP connection)**. Although Chapman '292 does disclose determining if a packet will cause a TCP trunk or TCP connection to exceed its allocated minimum bandwidth before it is sent and performing an action to help control congestion if the minimum bandwidth is exceeded **(See column 8 lines 21-54 of Chapman '292)**, Chapman '292 does not specifically disclose that the action will result in reducing the traffic for the TCP connection.

With respect to claim 46, Chapman '292 discloses that if it is determined that a packet will cause the traffic for the network path to exceed the level of traffic allowed for the network path, further determining that the packet will cause the traffic for a selected TCP connection to exceed its fair share amount of the network path, and performing a

congestion control function for the traffic of the selected TCP connection **(See column 8 lines 21-54 of Chapman '292 for reference determining that a particular packet will cause a TCP connection and a TCP trunk to exceed its guaranteed minimum bandwidth before it is sent and for reference to, if the packet will cause the TCP connection and TCP trunk to exceed its guaranteed minimum bandwidth, marking the packet with a lower priority indicating it is discardable to perform congestion control for the traffic of the TCP connection)**. Although Chapman '292 does disclose determining if a packet will cause a TCP trunk or TCP connection to exceed its allocated minimum bandwidth before it is sent and performing an action to help control congestion if the minimum bandwidth is exceeded **(See column 8 lines 21-54 of Chapman '292)**, Chapman '292 does not specifically disclose that the action will result in reducing the traffic for the TCP connection.

With respect to claims 1, 7, and 46, Chapman '450, in the field of communications, discloses reducing the traffic for a specific connection if it is determined that a level of traffic allowed for the connection will be exceeded (See the abstract and page 7 paragraphs 107-108 of Chapman '450 for reference to reducing traffic by stopping the sending of packets for a logical flow if it is determined that a maximum bandwidth level has been reached for the logical flow). Reducing the traffic for a specific connection if it is determined that a level of traffic allowed for the connection will be exceeded has the advantage of allowing congestion on a network path to be fairly controlled by reducing traffic for connections that have already

exceeded their allocated bandwidth while allowing packets for connections that have not exceeded their allocated bandwidth to still be sent.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Chapman '450, to combine reducing the traffic for a specific connection if it is determined that a level of traffic allowed for the connection will be exceeded, as suggested by Chapman '450, with the system and method of Chapman '292, with the motivation being to allow congestion on a network path to be fairly controlled by reducing traffic for connections that have already exceeded their allocated bandwidth while allowing packets for connections that have not exceeded their allocated bandwidth to still be sent.

With respect to claims 2 and 8, Chapman '292 discloses that the traffic is monitored using at least one of data transfer rate, peak data transfer rate, burst size, and maximum packet size **(See column 7 lines 59-67 and column 8 lines 35-45 of Chapman '292 for reference to monitoring average bandwidth, which is the same as data transfer rate)**.

With respect to claim 5, Chapman '292 discloses setting and changing a quality of service for packets **(See column 8 lines 35-45 of Chapman '292 for reference to setting and changing a packet priority, which is a quality of service level for the packets)**.

With respect to claim 6, Chapman '292 discloses dropping the packet **(See column 8 lines 35-54 of Chapman '292 for reference to marking packets as discardable meaning they are dropped)**.

With respect to claim 12, Chapman '292 discloses that the threshold takes into account a fair share of bandwidth available for the plurality of TCP connections **(See column 7 lines 59-67 of Chapman '292 for reference to using a fair share minimum bandwidth for each TCP connection of the TCP trunk)**.

4. Claims 3, 4, and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman '292 in view of Chapman '450 and in further view of Jain et al. (U.S. Pat. 5491801) and Qaddoura (U.S. Pat. 6646987).

With respect to claims 3 and 9, the combination of Chapman '292 and Chapman '450 does not disclose reducing a congestion window size by multiplying an amount of bandwidth available by a dynamic variable to reduce the bandwidth available based on a fair share for the TCP connection

With respect to claim 4, the combination of Chapman '292 and Chapman '450 does not disclose reducing the congestion window using an equation CW = max(MinW, min(CW*F,MaxW)).

With respect to claims 3, 4, and 9, Jain et al., in the field of communications discloses reducing a congestion window by multiplying the amount of bandwidth available by a variable based on a fair share for a particular network path **(See column 11 line 8-39 and column 11 line 63 to column 12 line 4 of Jain et al. for reference to reducing a window size by multiplying by a variable)**. Jain et al. also discloses reducing the congestion window using an equation CW = max(MinW, min(CW*F,MaxW)). Jain et al. discloses that a window size is reduced by a fraction of

0.875 times the current window size according to rules limiting a window size to a maximum and a minimum window size, which performs the same function as the claimed equation **(See column 11 lines 8-62 of Jain et al. for reference to the rules for reducing the window size)**. Reducing a congestion window by multiplying the amount of bandwidth available by a variable based on a fair share for a particular network path has the advantage of allowing each TCP connection to have its bandwidth allocation directly by changing its window size.

It would have been obvious for one of ordinary skill in the art at the time of the invention, to combine reducing a congestion window by multiplying the amount of bandwidth available by a variable based on a fair share for a particular network path, as suggested by Jain et al., with the system and method of Chapman '292 and Chapman '450, with the motivation being to allow each TCP connection to have its bandwidth allocation directly by changing its window size.

With respect to claims 3, 4, and 9, Although Jain et al. does disclose using a fraction, c, chosen as appropriate **(See column 11 line 63 to column 12 line 4)**, the combination of Chapman '292, Chapman '450, and Jain et al. does not specifically disclose that the fraction is a dynamic variable.

With respect to claims 3, 4, and 9, Qaddoura, in the field of communications, discloses adjusting a congestion window size using a dynamic variable **(See column 6 lines 42-52 of Qaddoura for reference to automatically adjusting a congestion window size to be a variable of a maximum congestion window size)**. Using a

dynamic variable to adjust a congestion window size has the advantage of providing greater control over the amount of congestion window size reduction.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Qaddoura, to combine using a dynamic variable to adjust a congestion window size, as suggested by Qaddoura, with the system and method of Chapman '292, Chapman '450, and Jain et al., with the motivation being to provide greater control over the amount of congestion window size reduction.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman '292 in view of Chapman '450 and in further view of Blasbalg (U.S. Pat. 4771391).

With respect to claim 10, the combination of Chapman '292 and Chapman '450 does not disclose reducing a sending size for data packets.

With respect to claim 10, Blasbalg, in the field of communications, discloses reducing the sending size of data packets when congestion is detected **(See column 12 line 53 to column 13 line 9 of Blasbalg for reference to reducing the packet size of packets on a congested path)**. Reducing the sending size of packets has the advantage of providing a way of reducing congestion on a path while still allowing some traffic to pass on the path.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Blasbalg, to combine reducing the sending

size of packets, as suggested by Blasbalg, with the congestion control system and method of Chapman '292 and Chapman '450, with the motivation being to provide a way of reducing congestion on a path while still allowing some traffic to pass on the path.

6. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman '292 in view of Chapman '450 and in further view of Firoiu et al. (U.S. pat. 6820128 B1).

With respect to claim 47, the combination of Chapman '292 and Chapman '450 does not disclose that the monitoring comprises monitoring at a server the traffic for the plurality of TCP connections or UDP associations.

With respect to claim 47, Firoiu et al., in the field of communications, discloses that TCP connection traffic is monitored at a server **(See column 4 lines 29-41 and Figure 1 of Firoiu et al. for reference to traffic being monitored at network devices 12 that may be servers)**. Monitoring traffic at a server has the advantage of allowing the server to directly control its traffic level to reduce server congestion.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Firoiu et al., to combine monitoring traffic at a server, as suggested by Firoiu et al., with the system and method of Chapman '292 and Chapman '450, with the motivation being to allow the server to directly control its traffic level to reduce server congestion.

Response to Arguments

7. Applicant's arguments filed 9/27/07 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chapman '450.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason E Mattis
Examiner
Art Unit 2616

jem